

ILAJ BIL HIJAMAH (CUPPING THERAPY) IN UNANI SYSTEM OF MEDICINE: ANECDOTAL PRACTICE TO EVIDENCE BASED THERAPY

ILAJ BIL HIJAMAH (TERAPIJA PUŠTANJEM KRVU) U MEDICINSKOM SUSTAVU UNANI: OD ANEGDOTALNE PRAKSE DO TERAPIJE TEMELJENE NA DOKAZIMA

S. M. Abbas Zaidi*, S. S. Jameel**, Kehkashan Jafri*,
Shariq A. Khan***, Ehsan Ahmad*

SUMMARY

Background: Cupping (Hijamah) therapy is very well documented as a result of several thousand years of clinical experiences in Unani medicine. In this procedure, suction is created by various means either with or without bloodletting. Though this therapy is being widely practiced across the globe for treating many chronic and intractable ailments but many reports reveal its unscientific and improper practices which results in many complications. Therefore to develop standard operative procedures and to propose protocols of cupping therapy in various diseases is the need of hour. Materials and methods: A thorough literature review of relevant journals and textbooks was performed to gather the maximum available data on cupping therapy. Conclusion: This paper seeks to introduce the general concepts of cupping therapy in Unani medicine and other traditional systems of medicine, shortcomings

* H.S.Z.H. Govt. Unani Medical College, Bhopal (M.P.), India.

** Faculty of Unani Medicine, Jamia Hamdard, New Delhi, India.

*** Regional Research Institute of Unani Medicine, Aligarh (U.P.), India.

Correspondence address: S. M. Abbas Zaidi, Department of Moaljaat (Internal Medicine), H.S.Z.H. Govt. Unani Medical College and Hospital, AYUSH Campus, Nehru Nagar-Kolar Bypass Road, Bhopal (M.P.), India. Email: drsymab@gmail.com.

and limitations of the currently published studies and suggest ways to improve these technical/methodological flaws. In addition, the authors have also attempted to provide the cupping related materials, hypotheses, observations which will provide the researchers the base for evaluating their usefulness in future clinical trials.

Key words: Hijamah; Cupping; Scarification; Unani Medicine.

INTRODUCTION

Unani system of medicine is based on four body humors viz. *Dam* (Blood), *Safra* (Yellow bile), *Balgham* (Phlegm) and *Sauda* (Black bile). These elements are said to make up the human body and in healthy individuals the elements are in a state of equilibrium. Imbalance can be caused when the equilibrium of the humours (*Akhlat*) is disturbed quantitatively or qualitatively or both and physiological functions of the body are deranged due to the abnormal temperament of affected organ or system resulting in disease. So the emphasis is given to evacuate the deranged humors from the body (*Istifragh*) or divert them to a route from which they can be eliminated easily (*Imala*) to restore health. Cupping therapy in Unani medicine is believed to work by restoring the altered humoral balance. Unani (Greeko-Arab) medicines is widely practiced in India, Pakistan, Iran, Bangladesh, Srilanka, Malaysia and some parts of China with their different local names.

TYPES OF CUPPING

The cupping is basically of two types:

- Dry Cupping / the cupping without scarification / *hijamat bila shart* / *hijamat jaffa*
- Wet Cupping / cupping with scarification / *hijamat bila shart* / *hijamat rataaba* / *hijamat damiya*.

In wet cupping superficial or deep scarification is applied on the surface of the body to be cupped, whereby the blood is sucked from the capillaries. In this procedure up to 20 ounces of blood could be withdrawn at a time from a local site, using 5 cups and obtaining 4 ounces per cup. Wet cupping has a complex procedure and is generally performed by experienced practitioners (Bayfield, 1823). Another type of cupping therapy, known as gliding cupping, a lubricant is spread on the surface of the skin before the cup is applied (Xue and O'Brien, 2003) here, cupping is used as a form of massage.

TIMING OF THE CUPPING

The best time for performing cupping is morning hours but *Al-Masihi* (1935) has advised that the best time for application of the cup is afternoon. Besides, it should be avoided at the beginning of the lunar month because the humors are then not yet on move or agitated; nor it is advised at the end of lunar month, because, they are less plentiful.

INSTRUMENTS USED

Zahrawi (1906) has described animal horn, wooden vessel, copper vessel, glass vessel, and needles for scarification while *Buqrat* (Hippocrates) has also described the application of small gourd for the purpose of eliciting blood after scarifying (Dickinson, 1917).

At the end of twentieth century, another method of suction was developed in which a valve is attached at the top of the jar and a small hand operated pump is attached so that the physician could suck out air without relying on fire (thus avoiding some hazards and having greater control over the amount of suction). The cups typically used in cupping treatment have diameters in the range of about 38mm (1.5 inches) to 50.8 mm (2 inches). A cup with a more rounded rim should be used which causes less discomfort to the patient (Kravetz, 2004).

PROCEDURE AND POSTOPERATIVE CARE

First of all the instruments and the surface of the body where the cup is to be applied are sterilized thoroughly with the antiseptic lotion followed by application of ointment or oils on the surface and vacuum is created. Cups are typically left in place for 5-20 minutes.

If wet cupping is to be performed, the site of cupping is scarified with the needles/scarificator prior to the application of cup. The scarification should be deep in the case of thick humors and to ensure the drawing of humors from deeper structures. For general purposes, the scarificator is set so that the lancets projected one inch from the surface of the box. Exceptions to this rule are made in the case of different sites to be cupped; behind the ears for example the depth should be 1/7 inch, for the temple 1/8 inch, and for the scalp 1/6 inch. The lancets are sprung through the skin by a trigger-like mechanism, which causes them to be released on pressing the bottom at the side of the box (Dickinson, 1917). Hippocrates gave instructions to the shape and application of cups. He recommended that they should be small in diameter, conical in shape and light in weight, when the disease for which they

are applied is deep seated. When the disease is near the surface, they should be wide. He recommended dry cupping mainly but only a limited use for bleeding or wet cupping (Turk and Allen, 1983). However, recent research findings contradict this observation and recommends the cup used should be as large as the anatomical area for which treatment is sought can accommodate (Tham *et al.*, 2006).

According to *Zahrawi* (1906), oils having the softening, resolving and vasodilator properties should be applied. In spring season, he advised Oil of *Khairi* (*Cheiranthus cheiri*), *Banafsha* (*Viola odorata*), *Badam shireen* (*Prunus amygdalus*), seeds of *Kadu* (*Cucurbita maxima*) while for the winter season, he recommended application of Oil of *Nargis* (*Narcissus tazetta*), *Sosan* (*Iris florentina*) and *Baboona* (*Matricaria chamomilla*). Furthermore, he stressed that if the humors are more viscid and cold then Oil of *Sa'atar* (*Origanum majorana*), *Bakayan* (*Melia azedarach*) and *Shibit* (*Anethum sowa*) should be applied.

Ismail Jurjani (1903) has suggested that if the thick and viscid humor is to be evacuated, the cupping should be performed three times successively. He also suggested the oil should not be applied prior to the cupping in the individuals showing sanguineous temperament or having the flabby flesh but should be applied in the persons having rigid flesh.

The first point of application should be made light and the cup is removed quickly. As the part is accustomed to the cups, they may be left longer. The negative pressure is created by two methods; one is to ignite a substance within the vessel and the other by sucking. According to *Ibn Sina* (1930), if cupping is done with heat, whether with or without scarification, especially in the cases of various kinds of flatulence, proves more efficient. Cupping without scarification is more applicable for cold swellings and whenever the gliding cupping is required.

After the evacuation, the site is washed with either Distillate of *Gulab* (*Rosa damascena*), *Mako* (*Solanum nigrum*), *Kadu* (*Cucurbita maxima*) or *Khاردal* (*Portulaca oleracea*). If the after discharges are plentiful, the site must be washed with Vinegar or Distillate of *Aas* and *Sumaaq* (*Myrtus communis* & *Rhus coriaria*). However, if the discharge is more viscid then washing is performed with Old wine, *Sa'atar* (*Origanum majorana*), decoction of *Shibit* (*Anethum sowa*) and *Baboona* (*Matricaria chamomilla*) (*Zahrawi*, 1906).

The site of the cupping may afterwards develop swelling and thus render it difficult of removal. To avoid this, a cloth or sponge soaked in tepid

or nearly hot water should be placed as a fomentation round it. In case of cupping with scarification, sterile dressing must be done with an antiseptic lotion.

After receiving this therapy, the patient is advised to take bed rest and avoid physical exertion. Besides, he should not be allowed to take heavy meal soon after getting this therapy. *Jurjani* (1903) has further recommended the ingestion of the juice of sour *Anar* (*Punica granatum*), *Kasni* (*Cichorium intybus*) & Vinegar for the patients having bilious temperament.

PRECAUTIONS

Following precautions should be kept into the consideration while performing Cupping:

- Cups in different sizes should be used accordingly to the cupping location. Generally, the areas where the muscle is abundant and elastic, free from hairs and bony ridges avoiding uneven sites are selected.
- When glass cups are used, under pressurizing the cup will not produce the required analgesic effect, over pressurizing the cup, on the other hand, would cause unnecessary discomfort to the patient (*Tham et al., 2006*).
- It is also advised that blood sugar level, bleeding time, clotting time of the patient along with history of taking any anticoagulant therapy should be assessed prior to performing wet cupping.

INDICATIONS OF CUPPING THERAPY

Ibn sina (1930) and other Unani physicians (*Baghdadi, 1942* and *Tabri, 2012*) have mentioned the points of cupping therapy in relation to their indications (Table 1).

Table 1 - Cupping points and their corresponding indications in Classical Unani Literature

POINTS OF APPLICATION (SITES)	INDICATIONS
Top of the head and occiput	Vertigo, prevents premature graying of hairs
Nape of the neck	Pustular keratitis, staphyloma
Under the chin	Teeth and throat troubles, cleanses head and jaws
Interscapular region	Hemorrhagic diseases of the chest and sanguineous asthma, hemoptysis

POINTS OF APPLICATION (SITES)	INDICATIONS
Over the umbilicus	Severe colic, flatulent distension of the abdomen, dysmenorrhoea
Over the loin	Inflammatory masses in upper part of thigh, bladder and uterus, pustules, gout, piles, pruritus of back (renal congestion) and elephantiasis
Lateral side of hip and over the buttocks	Sciatica, gout, piles, inguinal hernia. Draws the humor from the whole body, benefit intestines
Anterior aspect of thigh	Orchitis, boils of thigh and leg
Posterior aspect of thigh	Inflammatory swellings and boils of buttock
Calf muscles	Provokes menstrual flow
In popliteal space	Aneurysm, long standing abscess, septic ulcers of leg and foot
Over malleoli	Amenorrhoea, gout, sciatica
Between the hips	Haemorrhoid, gout

Furthermore, a large number of clinical studies have been performed globally on the effectiveness of this therapy (Table 2).

Table 2 - Review on articles that used Cupping therapy as intervention for treating various diseases

S.N.	AUTHORS	CONDITION	TYPE OF CUPPING	AS MONO/ADJUVANT THERAPY
1.	Kim <i>et al.</i> (2011)	Any Pain	D and W	M
2.	Kwon and Cho (2007)	Musculoskeletal pain	W	M
3.	Michalsen <i>et al.</i> (2009)	Carpal tunnel syndrome	W	M
4.	Zhang <i>et al.</i> (2009)	Fibrositis	W	Adjuvant to Acupuncture
5.	Lauche <i>et al.</i> (2011)	Chronic non specific neck pain	D	M

S.N.	AUTHORS	CONDITION	TYPE OF CUPPING	AS MONO/ADJUVANT THERAPY
6.	Zhang Z (1997)	Acute trigeminal neuralgia	W	M
7.	Zhang <i>et al.</i> (2010)	Acute gouty Arthritis	W	Adjuvant to TCM
8.	Kim <i>et al.</i> (2011)	Non specific low back pain	W	M
9.	Kaleem (2007)	Anterior Knee Pain	W	M
10.	Ludtke (2006)	Brachialgia paresthetica nocturna	W	M
11.	Farhadi (2008)	Low back pain	W	M
12.	Ahmed (2005)	Rheumatoid arthritis	W	Adjuvant to conventional treatment
13.	Huadong (1998)	Frozen shoulder	W	M
14.	Ahmadi <i>et al.</i> (2008)	Tension and Migraine headache	W	M
15.	Huang <i>et al.</i> (2006) ¹	Cancer pain	D	M
16.	Lee <i>et al.</i> (2010)	Hypertension	Dry and wet	M
17.	Lee <i>et al.</i> (2010)	Stroke rehabilitation	D and W	M
18.	Niasari <i>et al.</i> (2007)	Hyperlipidemia and Atherosclerosis	W	M
19.	Cao <i>et al.</i> (2010)	Herpes zoster	W	M
20.	Qi-fang Wang (2003), Chen Decheng <i>et al.</i> (1993)	Acne	W	Adjuvant to Acupuncture
21.	Huaiping (1993)	Urticaria	D	M
22.	Zhang <i>et al.</i> (2007)	Neurodermatitis	W	Adjuvant to red hot needle therapy

D = Dry, W = Wet, M = As Monotherapy

SIDE EFFECTS

Cupping can cause red marks, bruising, ecchymosis and sometimes small blisters appear on the skin which may take several days to several weeks to subside (Manber and Kanzler, 1996; Xue and O'Brien, 2003; Yoo and Tausk, 2004). However, if the blisters are severe, liquid is drawn out by a sterile syringe; gentian violet is applied and covered with gauze to prevent infection.

Cases of Panniculitis (Lee *et al.*, 1995), bloodletting induced cardiomyopathy (Sohn *et al.*, 2008), Iron deficiency anemia (Lee *et al.*, 2008), Burn (Sagi *et al.*, 1988 and Kose *et al.*, 2006), Acquired haemophilia A (Weng and Hsiao, 2008) have also been reported. Cupping of the cervical area may cause a haemorrhagic stroke by an acute rise in blood pressure (Blunt and Lee, 2010).

POSSIBLE MECHANISM OF ACTION

Though exact mechanism of action is still obscure but there are some hypotheses regarding its mechanism. The vacuum created by the lack of air anchors the cup to the skin and pull it upward inside the glass. As the air inside the jar cools, drawing up the skin is believed to open up skin's pores which help to stimulate the flow of the blood and lymphatic clearance, and also enables toxins trapped deep in the soft tissue layers to be brought to the body surface (Look and Look, 1997; Kouskoukis and Leider, 1983; Yoo and Tausk, 2004), thereby, creates an avenue for toxins to be drawn out of the body (*tan-qia*). In addition, cupping is said to reduce pain and high blood pressure as well as modulate neurohormones and the immune system, improve subcutaneous blood flow and to stimulate the autonomic nervous system (Chirali, 2007; Yoo and Tausk, 2007). None of these theories are, however, currently established in a scientific sense.

DISCUSSION

Cupping therapy in Unani system of medicine differs from that of traditional Chinese medicine cupping in terms of their basic theory and the meridians points of the cup application. Cupping is reproducible if the exact method is described in detail. Mechanical suction with a balloon has the best reproducibility (Huber *et al.*, 2011). In essence, effectiveness of cupping is currently not well-documented for most conditions.

Due to the insufficient RCTs and the variations in study quality, participants, intervention, control and outcome measures of the included RCTs, the results of most of the studies could not be synthesized by quantitative

method. Though most of the studies showed that cupping therapy was significant effective on certain diseases, the interpretation of the positive findings from the individual studies need to be incorporated with the clinical characteristics of the included studies and evidence strength. Published clinical trials on cupping therapy are of small size and substandard methodological quality. Furthermore, good quality studies of larger sample size and longer duration are needed to assess the effectiveness of cupping therapy. Hence, efforts should be made to improve the methodological quality, study design and report should also be standardized. The protocol of the study should be registered in authoritative organizations, such as WHO International Clinical Trial Registration Platform (WHO ICTRP).

According to the Consolidated Standards of Reporting Trials (CONSORT), randomization methods need to be clearly described and fully reported. We recommend following the CONSORT guidelines when designing clinical trials of cupping (Schulz *et al.*, 2010). Although blinding of the cupping therapy might be very difficult, blinding of outcome assessors and statistics should be attempted as much as possible to minimize performance and assessment biases. None of the RCTs included in the systematic review adopted both assessor and subject blinding. Although subject blinding is difficult to achieve for wet cupping, assessor blinding is possible. Efforts to develop and validate a sham cupping device is underway and hence, it is expected that such devices will be available in the near future and blinding would be feasible in trials using cupping intervention (Lee *et al.*, 2010). Sample size calculation and analysis of outcomes based on intention-to-treat principle are also important.

CONCLUSION AND FUTURE PROSPECTS

Cupping is one of the most important ancient treatment modalities in Unani as well as other traditional systems of medicine which is claimed to work via a range of mechanisms from counter-irritation to detoxification, but these are mere theories that have not been tested or investigated. The results of the RCT appear to be encouraging and the authors conclude that cupping therapy effectively relieves symptoms and pain. Ideally, patients for this intervention must be blinded such that any nonspecific effects are neutralized or eliminated. Some trials in the systematic review had a high risk of bias; low quality trials were more likely to overestimate the effect size. The number of trials included was also too small to distinguish between specific

and nonspecific effects, which precluded any firm conclusions being drawn. Therefore, the conclusion of the beneficial effect of cupping therapy needs to be confirmed in large and rigorously designed RCTs. It is therefore, the need of hour that unbiased, larger randomized clinical trials with improved methodology are conducted and negative data should also be published in order to refine its effectiveness on scientific evidences.

REFERENCES

1. Ahmadi, A., D.C. Schwebel and M. Rezaei, 2008. The efficacy of wet-cupping in the treatment of *tension and migraine headache*. Am. J. Chin. Med., 36(1):37-44.
2. Ahmed, S.M., N.H. Madbouly, S.S. Maklad and E.A, 2005. Abu-Shady. Immunomodulatory effects of bloodletting cupping therapy in patients with rheumatoid arthritis. Egypt. J. Immunol., 12(2):39-51.
3. Baghdadi IH.1942, *Kitabul Mukhtarat (In Arabic)*. 1st ed. Dairatul Ma'arif Usmania, Hyderabad, India
4. Bayfield, S., 1823. A treatise on practical cupping. E. Cox and Son, London, England
5. Blunt, S.B. and H.P. Lee, 2010. Can traditional "cupping" treatment cause a stroke? Medical Hypotheses, 74: 945–949.
6. Cao, H., C. Zhu and J. Liu, 2010. Wet cupping therapy for treatment of herpes zoster: a systematic review of randomized controlled trials. Altern. Ther. Health Med., 16:48–54.
7. Chirali, I.Z, 2007. Traditional Chinese Medicine Cupping therapy. Second ed. Churchill Livingstone, Elsevier, Philadelphia.
8. Decheng, C., J. Nawei and C. Xin, 1993. 47 cases of acne treated by prick blood-letting plus Cupping. J. Trad. Chin. Med., 13(3):185-186.
9. Dickinson, V., 1917. A case of cupping instruments. Proc R Soc Med; 10(Sect Hist Med): 90–93.
10. Farhadi, K., D.C. Schwebel, M. Saeb, M. Choubsaz, R. Mohammadi and A. Ahmadi, 2009. The effectiveness of wet-cupping for nonspecific low back pain in Iran: a randomized controlled trial. Complement. Ther. Med., 17: 9–15.
11. Huadong, J., 1998. 30 Cases of Frozen Shoulder treated by needling and Cupping. Int. J. Clin. Acupunc., 9 (3):327-328.
12. Huaiping, W., 1993. Treatment of Urticaria with Cupping. J. Trad. Chin. Med., 13(2):105.
13. Huang, Z.F., H.Z. Li, Z.J. Zhang, Z.Q. Tan, C. Chen and W. Chen , 2006. Observations on the efficacy of cupping for treating 30 patients with cancer pain. Shanghai Journal of Acupuncture and Moxibustion , 25: 14–5.
14. Huber R, M. Emerich and M. Braeunig, 2011. Cupping — is it reproducible? Experiments about factors determining the vacuum. Complement. Therap. Med., 19: 78—83.
15. Jurjani, I., 1903. *Zakhira Khwarizm shahi(Urdu Translation)*. Vol. 3, Munshi Nawal Kishore, Lucknow.

16. Kaleem, U., Y. Ahmed and W. Mohamed, 2007. An investigation into the effect of cupping therapy as a treatment for anterior knee pain and its potential role in health promotion. *Intern. J. Altern. Med.*, 4 (1).
17. Kim, J.I., T.H. Kim, M.S. Lee, J.W. Kang, K.H. Kim, J.Y. Choi, K.W. Kang, A.R. Kim, M. S. Shin, S.Y. Jung and S.M. Choi, 2011. Evaluation of wet cupping therapy for non specific low back pain: a randomized, waiting-list controlled, open label parallel group pilot trial. *Trials*, 12:146.
18. Kim, J.I., M.S. Lee, D.H. Lee, K. Boddy and E. Ernst, 2011. Cupping for treating pain: a systematic review. *Evidence based Complement. Alternat. Med.*, 467014.
19. Kose, A.A., Y. Karabagli and C. Cetin, 2006. An unusual cause of burns due to cupping: complication of a folk medicine remedy. *Burns*; 32: 126-127.
20. Kouskoukis, C.E. and M. Leider, 1983. Cupping: the art and the value. *The Am. J. Dermatopathology*, 5: 235–239.
21. Kravetz, R. E, 2004. Cupping glass. *The Am. J. Gastroenterol.*, 99: 1418.
22. Kwon, Y.D. and H.J. Cho, 2007. Systematic review of cupping including blood-letting therapy for musculoskeletal diseases in Korea. *Korean J. Orient. Phys. Pathol.*, 21: 789–93.
23. Lauche, R., H. Cramer, K.E. Choi, T. Rampp, F. Saha, G. Dobos and F. Musial, 2011. The influence of series of five dry cupping treatments on pain and mechanical threshold in patients with chronic non-specific neck pain- a randomized controlled pilot study. *BMC Complement. Altern. Med.*, 11: 63.
24. Lee, H.J, N.H. Park, H.J. Yun, S. Kim and D.Y. Jo, 2008. Cupping therapy induced Iron deficiency Anemia in a healthy man. *The Am. J. Med.*, 121(8):e5-6.
25. Lee, J.S., S.K. Ahn and S.H. Lee, 1995. Factitial panniculitis induced by cupping and acupuncture. *Cutis* , 55(4):217-218.
26. Lee, M.S., T.Y. Choi, B.C. Shin, C.H. Han and E. Ernst, 2010. Cupping for stroke rehabilitation: a systematic review. *J. Neurol. Sci.*, 294 (1-2):70-3.
27. Lee, M.S., T.Y. Choi, B.C. Shin, J.I. Kim and S.S. Nam, 2010. Cupping for hypertension: a systematic review. *Clin. Exp. Hypertens.*, 32: 423–425.
28. Lee, M.S., J.I. Kim, J.C. Kong, D.H. Lee and B.C. Shin, 2010. Developing and validating a sham cupping device. *Acupunct. Med.*, 28(4):200-204.
29. Look, K.M. and R.M. Look, 1997. Skin scraping, cupping, and moxibustion that may mimic physical abuse. *J. Forensic Sciences*, 42:103–105.
30. Ludtke, R., U. Albrecht, R. Stange and B. Uehleke, 2006. Brachialgia paraesthesia nocturna can be relieved by “wet cupping”- Results of a randomized pilot study. *Complement. Therapies in Medicine*, 14(4): 247-253.
31. Manber, H. and M. Kanzler, 1996. Consequences of cupping. *The New England Journal of Medicine*, 335:1281.

32. Masihi, I.Q., 1935. *Kitabul Umda Fil Jarahat*(In Arabic).Dairatul Ma'arif Usmania, Hyderabad.
33. Michalsen, A., S. Bock, R. Luedtke, T. Rampp, M. Baecker, J Bachmann, J Langhorst, F.Musial and G.J. Dobos, 2009. Effects of Traditional Cupping Therapy in Patients with Carpal Tunnel Syndrome: A Randomized Controlled Trial. *The Journal of Pain*, 10(6): 601-608.
34. Niasari, M., F. Kosari and A. Ahmadi, 2007.The effect of wet cupping on serum lipid concentrations of clinically healthy young men: a randomized controlled trial. *J. Altern. Complement.Med.* 13: 79–82.
35. Sagi, A., P. Ben-Meir and C. Bibi, 1988. Burn hazard from cupping—an ancient universal medication still in practice. *Burns Incl. Therm. Inj.*, 14(4):323–325.
36. Schulz, K.F., D.G. Altman and Moher D, 2010. Consort 2010 statement: updated guidelines for reporting parallel group randomized trials, *BMC Medicine*, 8:18.
37. Ibn Sina. 1930. *The Canon of Medicine*, Tr. O.C. Gruner, Luzac& Co, London.
38. Sohn, I.S., E.S. Jin, J.M. Cho, C.J. Kim, J.H. Bae, J.Y. Moon , S.H. Lee and M.J. Kim,2008. Bloodletting-induced cardiomyopathy: reversible cardiac hypertrophy in severe chronic anaemia from long-term bloodletting with cupping. *Eur. J. Echocardiogr.* , 9(5):585-586.
39. Tabri, A.I.R., 2002. *Firdous-ul Hikmat*(Urdu Translation):. Faisal Publication, Deoband, India.
40. Tham, L.M., H.P. Lee and C. Lu, 2006. Cupping from a biomechanical perspective. *Journal of Biomechanics*; 39: 2183-2193.
41. Turk, J.L. and E. Allen, 1983. Bleeding and cupping. *Ann. R. Coll. Surg. Engl.*, 65: 128–131.
42. Wang, Q. and G. Wang, 2008. Therapeutic effect observation on treatment of acne with acupuncture plus moving cupping and blood-letting. *J.Acupunc. and Tuina Science*, 6(4): 212-214.
43. Weng, Y.M. and C.T. Hsiao, 2008. Acquired hemophilia A associated with therapeutic Cupping. *Journal of Emergency Medicine*, 26 (8): 970.e1–2.
44. Xue, C.C. and K.A. O'Brien, 2003. *Modalities of Chinese medicine*. In: Leung PC, Xue CC, Cheng YC. (Eds.). *A Comprehensive Guide to Chinese Medicine*. World Scientific, Singapore: 19–46.
45. Yoo, S.S. and F. Tausk, 2004. Cupping: east meets west. *Interna.J. Dermatol.*, 42: 664–665.
46. Zahrawi, A.Q., 1906. *Al-Tasreef Liman Ajeza An-at-taleef* (In Arabic). Nami Press, Lucknow.

47. Zhang, H.L., 2009. Blood-letting puncture and cupping therapies combined with acupuncture for treatment of 140 cases of fibrositis. J.Trad. Chin. Med., 29(4): 277-278.
48. Zhang, S.J., J.P. Liu and K.Q. He, 2010. Treatment of acute gouty arthritis by blood-letting cupping plus herbal medicine. J.Trad. Chin. Med., 30(1): 18-20.
49. Zhang, Y., J.W. Zhou, S. Huang, C.T. Chen, Y. Deng and Y.H. Huang, 2007. Observation on the therapeutic effect of a red-hot needle therapy combined with blood-letting puncture and cupping for treatment of neurodermatitis. Zhongguo Zhen Jiu , 27(4):252-254.
50. Zhang, Z., 1997. Observation on therapeutic effects of bloodletting punctures with Cupping in Acute Trigeminal Neuralgia. J. Trad. Chin. Med., 17 (4): 272-274.

SAŽETAK

Uvod: Terapija puštanjem krvi (hijamah) vrlo je dobro dokumentirana kao posljedica nekoliko stotina godina kliničkih iskustava medicine Unani. U tom je postupku sukcija ostvarena različitim sredstvima s ispuštanjem krvi ili bez njega. Iako se ova terapija primjenjuje širom svijeta za liječenje mnogih kroničnih i teško lječivih bolesti, mnoga izvješća otkrivaju neznanstvene i nepravilne prakse koje rezultiraju mnogim komplikacijama. Stoga je nužno čim prije razviti standardnu proceduru te predložiti protokole za terapiju puštanjem krvi kod različitih bolesti. Materijali i metode: Kako bi se prikupila maksimalna količina podataka o terapiji puštanjem krvi, učinjen je pregled relevantnih časopisa i udžbenika. Zaključak: Ovaj rad nastoji predstaviti osnovni koncept terapije puštanjem krvi u medicini Unani kao i u drugim tradicijskim medicinama, nedostatke i ograničenja objavljenih aktualnih studija te predložiti na koje načine poboljšati ove tehničke/metodološke nedostatke. Osim toga autori su također pokušali odrediti materijale koji se koriste pri puštanju krvi, hipoteze i opažanja koja će istraživačima omogućiti temelj za evaluaciju njihove korisnosti u budućim kliničkim ispitivanjima.

Ključne riječi: *hijamah; puštanje krvi; skarifikacija; medicina Unani.*